



## LGGS Biology Summer Work

This is part of **How Science Works**. Scientists read and think and talk about ideas – hypotheses—evidence. They try things out - test their ideas - listen to each other.

If you are going to study A Level Biology you should be interested in the subject. So, to help develop your interest, we suggest that you read a “popular” biology book over the summer and write a short review. The review should be no more than 400 words and include:

- a brief synopsis
- what you did and didn't like about it
- whether it was the right level for you
- whether you would recommend it to another A- level student

Finally, don't forget to give your book a star rating:

- ★☆☆☆☆ Not worth reading or way too advanced for me. The tragic 1-star review. I severely disliked this book. It sent me to sleep every time I picked it up.
- ★★☆☆☆ Almost interesting, if you've nothing else to do. I wouldn't recommend it to a friend. But, it wasn't all bad.
- ★★★☆☆ Worth reading, I chugged through it happily, but, truthfully, forgot everything about it as soon as I put it down.
- ★★★★☆ I enjoyed this and learned a lot. I found it interesting and it sparked discussion. I would recommend this book to a friend.
- ★★★★★ Excellent, it made me want to be a biologist. I enjoyed this book so much I insisted that others read it too. It was a 'couldn't put it down', 'excited to pick it up' type of read.

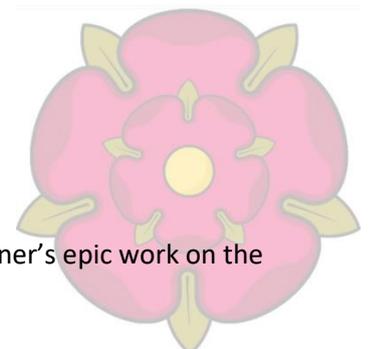
**Please email your reviews to staff as follows:**

Birthday between 1 <sup>st</sup> and 6 <sup>th</sup> of the month	Dr Cook	<a href="mailto:p.cook@lggs.lancs.sch.uk">p.cook@lggs.lancs.sch.uk</a>
Birthday between 7 <sup>th</sup> and 12 <sup>th</sup> of the month	Miss Houlihan	<a href="mailto:e.houlihan@lggs.lancs.sch.uk">e.houlihan@lggs.lancs.sch.uk</a>
Birthday between 13 <sup>th</sup> and 18 <sup>th</sup> of the month	Mrs Hutchinson	<a href="mailto:s.hutchinson@lggs.lancs.sch.uk">s.hutchinson@lggs.lancs.sch.uk</a>
Birthday between 19 <sup>th</sup> and 24 <sup>th</sup> of the month	Dr Moody	<a href="mailto:s.moody@lggs.lancs.sch.uk">s.moody@lggs.lancs.sch.uk</a>
Birthday between 25 <sup>th</sup> and 31 <sup>st</sup> of the month	Mr Pim	<a href="mailto:r.pim@lggs.lancs.sch.uk">r.pim@lggs.lancs.sch.uk</a>

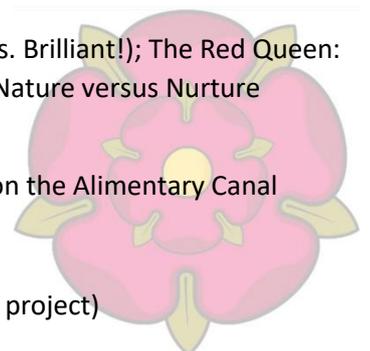
The best reviews will be displayed on the department noticeboards. There are hundreds of good science books around, so why not have a browse of the science shelves of a good bookshop or library and pick a book that looks interesting?

**Here is a list of some of some of our favourite authors to get you started...**

<b>Jennifer Ackerman</b>	The Genius of Birds
<b>David Attenborough</b>	Any of the books of his TV series.
<b>David Bodanis</b>	$E = mc^2$ A Biography of the World's most famous Equation
<b>Andrew Brown</b>	In the Beginning was the Worm (fascinating story of Sydney Brenner's epic work on the nematode worm)



<b>Bill Bryson</b>	A Short History of Nearly Everything (Brilliant! Covers the whole of science.)
<b>Rachel Carson</b>	Silent Spring (the classic book that started the environmental movement)
<b>Paul Colinvaux</b>	Why Big Fierce Animals are Rare (overview of modern ecology)
<b>Francis Crick</b>	What Mad Pursuit? (his own story of the discovery of the structure of DNA)
<b>Richard Dawkins</b>	Anything (all highly recommended) e.g. River Out of Eden; Unweaving the Rainbow; Climbing Mount Improbable; The Devil's Chaplain; The Ancestor's Tale; The Blind Watchmaker (all about evolution)
<b>Jared Diamond</b>	Guns, Germs and Steel; The Rise and Fall of the Third Chimpanzee; Collapse: How Societies Choose to Fail or Survive
<b>Cordelia Fine</b>	Delusions of Gender: How Our Minds, Society and Neurosexism Create Difference
<b>Richard Fortey</b>	Life: An Unauthorised Biography; Trilobite: Eyewitness to Evolution
<b>Jane Goodall</b>	My Life with the Chimpanzees; In the Shadow of Man (both about her ground-breaking studies of chimpanzee behaviour)
<b>Stephen J. Gould</b>	Ever Since Darwin; The Panda's Thumb; The Flamingo's Smile; Hens' Teeth and Horses Toes; Bully for Brontosaurus; An Urchin in the Storm (all essays on evolution, and all recommended)
<b>Susan Greenfield</b>	The Private Life of the Brain.
<b>John Gribbin</b>	Anything e.g. In search of the Double helix (about the discovery of the structure of DNA); Hothouse Earth (about the greenhouse effect and Gaia); In the Beginning (about the origins of life)
<b>Steve Jones</b>	The Language of the Genes: Biology, History and the Evolutionary Future; In the Blood: God, Genes and Destiny; Almost like a Whale; Y: The Descent of Men.
<b>Elizabeth Kolbert</b>	The Sixth Extinction: An Unnatural History
<b>Richard Leaky</b>	The Origin of Humankind; The Sixth Extinction (about the current mass extinction of life)
<b>James Lovelock</b>	Gaia: The Practical Subject of Planetary Medicine; The Revenge of Gaia (both about climate change).
<b>Lynn Margulis</b>	Microcosmos; The Symbiotic Planet (about endosymbiosis)
<b>Ernst Mayr</b>	What Evolution Is.
<b>Desmond Morris</b>	The Naked Ape: A Zoologist's Study of the Human Animal (a classic)
<b>Richard Preston</b>	The Hot Zone (about the outbreak of Ebola virus in the USA). Also writes scary fiction about biological warfare.
<b>Ed Regis</b>	The Great Mambo Chicken (scientists' sillier ideas); Virus Ground Control: Stalking the Killer Viruses; Nano (about nanotechnology)
<b>Matt Ridley</b>	Anything e.g. Genome (Amazing discoveries in modern genetics. Brilliant!); The Red Queen: Sex and the Evolution of human nature; The Origins of Virtue; Nature versus Nurture (difficult).
<b>Mary Roach</b>	Stiff: The Curious Lives of Human Cadavers; Gulp: Adventures on the Alimentary Canal
<b>Rebecca Skloot</b>	The Immortal Life of Henrietta Lacks
<b>John Sulston</b>	The Common Thread (the best book about the human genome project)



<b>Bryan Sykes</b>	The seven daughters of Eve (about mitochondrial DNA and human evolution); Adam's Curse: A Future without Men.
<b>Colin Tudge</b>	The variety of Life: A Survey and celebration of All the Creatures that Have Ever Lived; Neanderthals, Bandits and Farmers; In Mendel's Footnotes.
<b>James Watson</b>	The Double Helix (his own story of the discovery of the structure of DNA); DNA: The Secret of Life.
<b>Christopher Wills</b>	The Spark of Life: Darwin and the Primeval Soup; Exons, Introns and Talking Genes (about the human genome project); The Wisdom of the Genes (about genetic evolution)
<b>Robert Winston</b>	The books of his TV series e.g. The Human Mind and how to Make the Most of It; Body: An Amazing tour of Human Anatomy; Human; Human Instinct.
<b>Lewis Wolpert</b>	The Unnatural Nature of Science (about the nature of science); The Triumph of the Embryo (about embryo development); Six Impossible Things Before Breakfast: the Evolutionary Origins of Belief.

## Here are some examples of excellent reviews written in previous years.



### **The Body: A Guide for Occupants by Bill Bryson**

As I am very interested in the Human Body, I decided to read The Body by Bill Bryson and it did not disappoint! With each chapter dedicated to an aspect of the body, Bryson takes you on a guided tour around the body, from everything about the brain and sleep to the female genitalia. This book is jam-packed full of facts across all topics that you barely notice the large amounts of knowledge you are consuming.

One of my favourite chapters were 'When Things go Wrong: Diseases', I found it very relevant to the current global situation and it enabled me to delve deeper into what makes a virus a virus. The chapter also touched on the factors that make a virus successful. "It is one that doesn't kill too well and can circulate widely." Making the flu and the coronavirus both very successful as transmission.

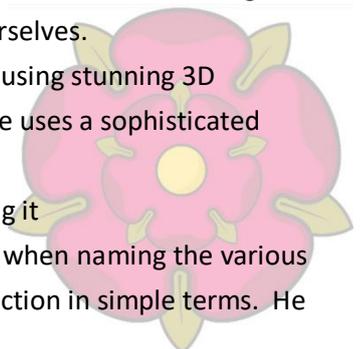
Another favourite was "On The Move" where Bryson talks about how we have evolved to walk on two feet and about why that change might have occurred. He mentions the advantages and disadvantages that came with dropping out of trees and walking on two feet, and how it made our ancestors 'exceedingly more vulnerable'. This book was a very accessible read, and I believe it is suited to not just people with an interest in Biology, but for anybody who wants to learn more about the body we occupy and the complexity of life.



### **Body: An Amazing tour of Human Anatomy by Robert Winston**

The title 'Body: An Amazing tour of Human Anatomy', promises a captivating, awe-inspiring read. Luckily, in my opinion, it doesn't disappoint. Aimed at young people, this book is designed to capture their interest and ignite a desire to learn more about, arguably, one of the most complex systems on Earth: ourselves.

Robert Winston takes us on a journey through the inner workings of the human body, using stunning 3D graphics and diagrams to bring the mindboggling complexities of our anatomy alive. He uses a sophisticated layout to make the book accessible to all ages and abilities, breaking up the text into easy-to-read, bite size chunks and accompanying it with truly incredible pictures. Although scientific language is used abundantly, such as when naming the various parts of our anatomy, Winston compensates (most of the time) by explaining their function in simple terms. He



takes a methodical 'tip to toe' approach, giving a basic overview of each bodily system. He endeavours to maintain the reader's attention throughout, using 'Did you know?' boxes filled with fascinating facts.

The book is so highly pictorial that it can be enjoyed by young and old alike; from those studying Medicine to those discovering the inner workings of our body for the very first time. The pictures never fail to amaze. It is these that give the book such a unique selling point, and make it stand out in the overcrowded market of Human Body books. It really is difficult to fault, although if I was being critical, I would perhaps argue that the included CD is rather unremarkable and uninspiring. Basic models of the body appear on screen, and they can be rotated etc, but I did not feel that they were of the same standard as the images depicted in the book, and they certainly did not add to it in anyway.

However, the book itself can be appreciated on many levels, and I believe that this is what makes it a success. I would therefore recommend it not only to a fellow A level student, but indeed to anybody with an enquiring mind who would like to find out a little more about ourselves and the way we work. Because of this, I would rate it at 5 stars.

## A Short History of Nearly Everything by Bill Bryson



Simply put, this book tells the story of the earth and everything on it; from the beginning of the universe, the physical history of the planet and the expansion and progress of life on earth. As the title hints, it is a well-rounded and informative account and description of, well, nearly everything you would want to know about planet earth and life on it!

The very first page narrates Bill Bryson's process of researching for this book, and perfecting it with help from very notable authorities and specialists. The introduction then commences and immediately we as readers are immersed into Bill's world – a warm, friendly preface where he refers to us as 'trillions of drifting atoms' who have assembled in an 'intricate and obliging matter'. And so, the weird and wonderful journey of Mr Bryson's finding and explanations begins.

Throughout the book Bill Bryson divulges into inflation theory (Amongst other fascinating theories) from Alan Guth, a particle physicist, which rationally explains the early moments of the universe. I found this explanation very interesting, as inflation theory as this is the most common explanation as to what happened at the very beginning of the universe. It's like a beginner's guide to some very, very complicated hypotheses.

I liked the fact that Bill addressed some extremely complicated theories, and managed to put them into words the general public could understand (without referring to an encyclopaedia every 5 lines!) yet without losing its integrity and the important facts. This book was fantastic to read as the informal narrative is almost like it is a very witty and interesting best friend explaining The Big Bang theory to you, not a professor or PhD! Bill Bryson's renowned and excellent writing skills mean there are lots of fun metaphors such as 'An eternal cycle of expanding and collapsing universes, like the bladder on an oxygen machine.'

On the contrary, the downside to having this very long and sizable book explain numerous theories and ideas, is that by the end of the book, a few of the ideas and facts may be forgotten and the entertaining and satirical metaphors may become very slightly confused in the maze that is an A-Level teenage mind! In addition, readers who are very passionate and well-informed may find some of the explanations to be too basic and a little over-simplified.

Although, as this book covers and touches on almost every topic we could wish to know about, I would indeed recommend it to other A-Level students, as it is excellent as understanding scientific premises and offers a fun, unique, witty and easy to understand basis of nearly everything (believe it or not!) For this reason, I give this book a 4-star rating, as I enjoyed it and learned quite a bit!

